DOCUMENT RESUME

ED 249 156 SO 015 942

AUTHOR Rammage, Alix
TITLE Pottery from Pakistan. A Handbook.
INSTITUTION City of Birmingham Polytechnic (England). Dept. of Art.
PUB DATE 81
NOTE 97p.; Developed by the Ethnographic Resources for Art Education Project and The Pottery Cultures Project. For related documents on pottery, see SO 015 940-941. Illustrations may not reproduce clearly.
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Art Activities; Art Education; Art History; *Ceramics; Cross Cultural Studies; Cultural Background; *Cultural Education; Cultural Traits; *Design Crafts; Elementary Secondary Education; Folk Culture; *Islamic Culture
IDENTIFIERS *Pakistan

ABSTRACT

One of three handbooks dealing with pottery traditions from around the world, this packet draws together information about historical, ethnographic, and pottery traditions of Pakistan. The handbook begins with a brief discussion of Pakistan's land and people, a short history of Pakistan, Islamic pottery traditions, and Pakistan potters and religion. Subsequent sections discuss the role and traditions of potters, sources and types of clay, the earlier use of the single wheel, the use and design of a potter's wheel (Dukan), and methods of making water pots in the North West Frontier Province. Additional pottery techniques described include making a water pot using a mould, decorating unglazed ware, identifying unglazed pottery types, tandur making (a type of oven used for making bread), and constructing a rice husking mill, foot scrapers, clay musical instruments, glazed ware, and tiles. Because the painted decorations of Pakistanian glazed ware are its most dominant characteristic, subsequent sections deal with decoration and preparation of multan glazes. Charts showing the composition of glaze batch materials and sequence of preparation, application, and decoration are provided. A brief word about the firing of glazed ware and glazed ware pottery types precedes a workshop section, which includes step-by-step instructions for using a combined mould and throwing technique, making a double-walled pot (Cilam), and making a musical instrument. (LH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED249156

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

The document has been reproduced as received from the person or organization originating it.

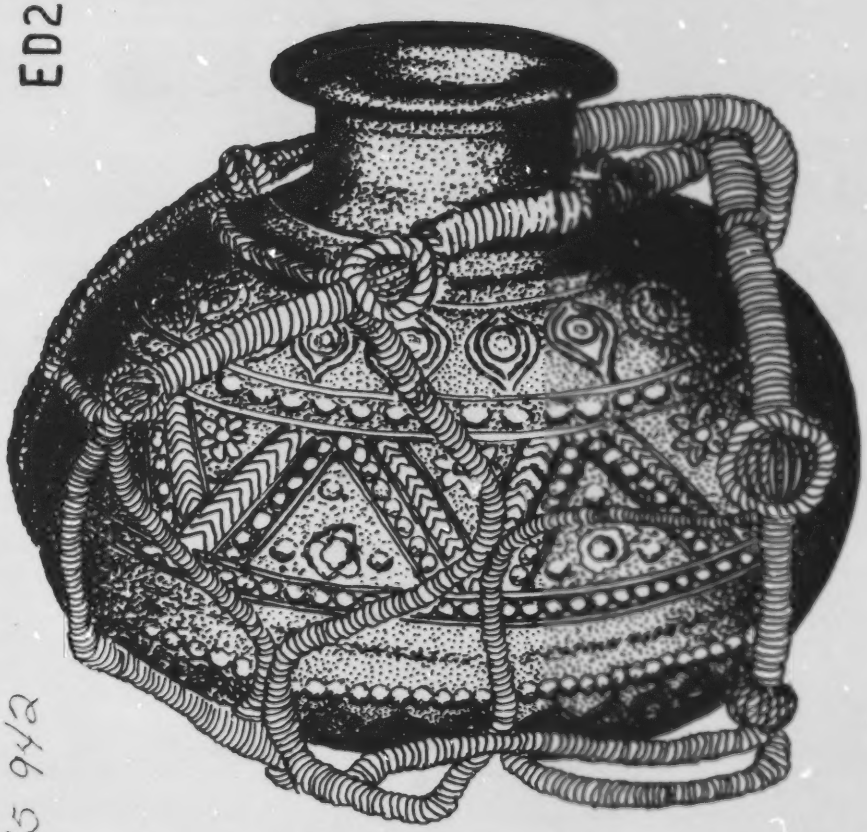
X Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

D. Shanley

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."



SP 015 942

Pottery Cultures

POTTERY FROM PAKISTAN

A Handbook

ETHNOGRAPHIC RESOURCES FOR ART EDUCATION

Pottery Cultures

POTTERY FROM PAKISTAN

A Handbook

The Pottery Cultures Project was made possible by a grant from the Manpower Service Commission's Special Temporary Employment Programme and with assistance from the Schools Council Morrell Fund. 1981

Pottery Cultures

POTTERY FROM PAKISTAN

Pottery Cultures Project and
Educational Resources
for Art Education
School of Art Education
Birmingham Polytechnic
Margaret Street
Birmingham
B3 3BX

Researched and Written by Alix Ramage

Graphics by Dinah Snipes Steveni

Contents

Using the pack	
Acknowledgements	
Land and people	1
A short history of Pakistan	2
Islamic pottery traditions & Pakistan	4
Pakistani potters and religion	5
Potters	8
Clays	9
Single wheel	10
Potter's wheel (Dukan)	11
A method of making water pots in the North West Frontier Province	12
Making a water pot using a mould	13
Decorating unglazed ware	15
Firing unglazed ware	17
Domestic unglazed pottery types	19
Tandur making	22
Rice husking mill	23
Foot scrapers	24
Two clay musical instruments	25
Glazed ware	26
Tiles	27
Decoration	29
Kashi-Kari	30
Preparation of multan glazes	31
Composition of glaze batch materials and sequence of preparation	33
Sequences of application and decoration and of glazes on glazed ware	34
Firing of glazed ware	35
Glazed ware pottery types	35
Workshop section	36
Making a double-walled pot (Cilam)	39
Making a musical instrument	41

BEST COPY AVAILABLE

Using the Pack

This pack entitled Pottery from Pakistan represents a third and final contribution to a series of packs we have researched and produced on different ways of making pottery. The first pack detailed traditional means of pottery manufacture in West Africa, and the second explored South American techniques, particularly in Peru. The intention of all three packs is to present in a readily accesible form ceramic traditions, techniques and achievements from quite different cultures. We recognize that the unfamiliarity of some of the material will require a little consideration before you decide how you want to use the pack. You will find that some of the contents are suitable for quite young children whilst older students may enjoy exploring the pack for themselves. We hope that you find this pack sufficiently flexible to satisy your particular interests.

This pack consists of this handbook, a set of slides (described at the end of this book, and a set of worksheets. This handbook attempts to provide context for the pottery in the first section, then deals with pottery techniques and artifacts. The book ends with a workshop section which shows how pottery is used both in cooking and making music. We also have incorporated here some adaptations which have been tried out to make these objects under British conditions.

We have found that the first two packs have been used in a wide variety of ways and some have employed the ethnographic material from the 'Land and People' section of the handbook for General Studies. Others have used the slides in their Art History programmes. Most have taken techniques of production as a central focus and adapted the materials to their own art lessons.

We hope that this introduction to another pottery tradition will provide interest to your ceramics programme and that it suggests some alternative methods of using clay. We also intend that this pack along with its companion studies of pottery and another produced on Dyed and Printed Textiles (also now available) will contribute to the fostering of a multicultural apporach to the visual arts and crafts. We firmly believe that familiarity with other traditions enriches the potential for innovation in artistic as well as cultural terms within our society.

We would be most appreciative of any comments you could suggest. We are especially keen to hear the different curricular purposes you use the pack for and the success and limitations of these materials

Helga Loeb, Phil Slight, Nick Stanley
Ethnographic Resources in Art Education
Dept. of Art Education
Birmingham Polytechnic.

Acknowledgments

This teaching pack has drawn heavily upon the major research work of Owen S. Rye and Clifford Evans: 'Traditional Pottery Techniques of Pakistan : Field and Laboratory Studies', published in Smithsonian Contributions to Anthropology, No 2L. Their work constitutes the primary source for material contained in the handbook, including the partial reproduction of the tables on glaze preparation.

Many thanks are also due to the Indian Department of the Victoria and Albert Museum, London, for their assistance both with the research for this pack, and in providing access to their stored collection of ceramics from Pakistan. We are also grateful for their permission to publish our photographs of their collection, which comprise the slide pack accompanying this handbook.

Acknowledgment is also made to the following libraries for their help in providing research facilities : The British Library, The Indian Section Library at the Victoria and Albert Museum, The University of Birmingham Library and the Birmingham Central Libraries.

We would like to thank the following individuals for their help and interest in the progress of this pack : Mrs Zara Fleming, Mr Junaid Patel the Honorary Secretary of the Pakistan Cultural Panel Birmingham, Miss Rashida Noormohamed formerly with Urban Aid, Birmingham. We would also like to thank Mr Ken Barber of Ulster Polytechnic for work on this pack and Mr Alan Leary of the Centre for West African Studies, The University of Birmingham, whose pioneering work in adapting traditional Pakistani pottery techniques to the school curriculum first gave us the idea for this teaching pack. Mr Leary has also contributed to the workshop section of the handbook.

Finally it is proper to acknowledge the dedication of those researching, laying out and printing this pack on a voluntary basis long after our funding ran out. To these we owe a special debt.

BEST COPY AVAILABLE

Land and People

The total area of Pakistan is about 310,404 square miles. Pakistan is bounded by Iran in the west, Afghanistan in the nort-west, India in the east, and the Arabian Sea in the south. It lies between 23 and 38 degrees north latitude and 61 and 76 degrees east longditude. Its plains are crossed by the river Indus and its tributaries.

Pakistan has three well defined seasons : winter, summer and the monsoon or rainy season. Summer starts in mid-April, and temperatures may rise up to 46°C. The monsoon sets in between July and September, bringing an average of 15 - 20 inches of rain to the hills and 60 - 80 inches to the plain. Winter, from November to March, is generally the most pleasant season throughout Pakistan, except in the cold mountainous regions.

The national language of Pakistan is Urdu, although the official language is English. A number of regional languages are also spoken, including Punjabi, Pushtu, Sindhi and Baluchi.

The total population of Pakistan is around 80 million, with another million Pakistanis living abroad.

In the 1961 census 97.17% of the population were returned as Muslim. Christianity is the largest minority religion, having in 1961 1.3% of the total population. Other religious groups are: Hindus, Buddhists, Zoroastrians, and scheduled castes.

A Short History of Pakistan

Pre-history

The present-day country of Pakistan occupies the Indus basin, one of the three cradles of civilisation of the ancient world. The earliest city so far identified in the region, at Rehman Dheri, north of Dera Ismail Khan, dates from 3,200 BC. Later, on the most extensive of Bronze Age civilisations flourished in the Indus valley from 2500-1700 BC. Known as the 'Indus Civilisation', its southern boundaries stretched from the Mekran coast of Pakistan, west of the Nal river, to the Gulf of Cambay in the present Indian state of Gujarat. To the north it reached from Harappa on the banks of the river Ravi, into India to Rupar on the Sutlej river, and as far as Maerut beyond Delhi.

Classical Period

In the sixth century BC Gandhara in the north-west of Pakistan was conquered by Cyrus, king of Persia, and in the following century Persia also annexed the Indus valley. Darius the Great controlled the area more or less corresponding to present-day Pakistan, and in 327 BC Alexander the Great ruled a similar territory.

Following the death of Alexander, the area had a confused and divided existence for several centuries. Sind and Baluchistan became a western adjunct of the kingdom of the Western Satraps in

the second century AD, whose capital was at Madhya Pradesh in central India. Kingdoms of Indo-Greek origin emerged in the northern mountains, producing a fusion of Greek and Buddhist cultures. Over the years too, successive waves of Central Asian peoples migrated to Pakistan, including Scythians, Kushans and Huns.

Islam

Islam, originating in Arabia in the seventh century AD, was first introduced to the Indus basin in 711 AD by Mohammed Ben Kasim, Governor of Basra, who established control of the Indus valley as far as Multan, having originally arrived to suppress piracy on Arab shipping. More vigorous prolselytisation of the non-Muslim population was carried out by invaders from the northwest. In the eleventh century the Punjab became the eastern province of an empire ruled from Ghazni in Afghanistan, which extended through Iran to the borders of the present-day Iraq. Lahore was the regional capital in the Punjab, while much of Baluchistan and Sind were from time to time either ruled directly or as a tributary to Ghazni.

In 1206 the centre of Muslim power in the sub-continent shifted to Delhi, followed by three centuries of rule by the Delhi Sultans, and a separation of their territories from Ghazni. It ended with the arrival of Babur from Kabul in

BEST COPY AVAILABLE

1525, and the foundation of the Moghul Empire in Delhi. Under the Moghuls, Muslim power spread almost throughout the Indian sub-continent, reaching its zenith in the seventeenth century, but becoming fragmented in the eighteenth century.

Britain and Pakistan

With the disruption of the Moghul Empire in the eighteenth century, British efforts to extend their control had far-reaching implications for modern Pakistan. In the early nineteenth century, the Sikhs, a militant religious group deriving from Hinduism in the sixteenth century, seized power in the Punjab. Their leader, Ranjit Singh, from his capital at Lahore, was able to control most of Kashmir, and lands west of the Indus, pushing back and containing Afghan influence. After his death, the Sikhs came into armed conflict with the British. After the first Sikh war, Kashmir was surrendered and sold by the British to a Hindu Raja, placing its mainly Muslim population under non-Muslim rule: a situation which still exists as a major bone of contention between Pakistan and India. The second Sikh War, 1848-9 resulted in a takeover by the British or Sikh territories, and of the border with Afghanistan. Sind was annexed in 1843.

Partition : 15 August 1947

When Britain transferred sovreignty over its Indian Empire to the new Dominions of India and Pakistan, Quaid-e-Azam Mohammed Ali Jinnah, formerly President of the All India Muslim League, became the first Governor General of independent Pakistan. Unfortunately massive violence broke out, especially in the Punjab, where the Sikhs were enraged by the rejection of their speical claims for self-rule. Muslims were massacred in large numbers ; where they were in the majority they retaliated upon the Hindus. The total of deaths was between 200,000 and half a million. Four and a half million Hindus fled from Pakistan to India, and around six million Muslims fled from India to Pakistan.

Pakistan became a sovreign Republic on 23 March 1956.

BEST COPY AVAILABLE

Islamic Pottery Traditions and Pakistan

The earliest known Muslim potters date from the 7th century A.D., and by the early 9th century, potters in Egypt, Syria, Mesopotamia and Persia had already developed advanced forms of ceramics decoration and evolved a great variey of shapes, techniques, patterns and colour schemes that could be identified as exclusively Islamic. Around this time, Chinese pottery, stoneware and porcelain reached the Near East, and Muslims began to elaborate upon Chinese wares.

According to some writers, Ghengis Khan, following his conquests in China in 1212 A.D., acquired a Chinese wife, who brought with her the Chinese art of glazing pottery to Iran, and from thence to Sind in what is now Pakistan.

But what is certain is that by the early middle ages the influence of China can clearly be seen in the work of Muslim potters. The glazed pottery of the Punjab and Sind dates from this period, and has been connected with traditions surviving in Iran of the ancient civilisations of Ninevah and Babylon.

The name of the art potter 'Kashigar' of Multan and Sind derives from the Persian town of Kashan, the earliest known place of manufacture of art pottery in Persia. For centuries Sind in particular retained close contacts with Persia, culminating in the 19th century with a period of Persian occupation. Punjabi and Sindhi glazed pottery was directly influenced by Iranian, in the shape of its drinking

cups, water bottles, jars, bowls, saucers and dishes of all shapes and sizes, together with pinnacles for domes and pierced windows. Bowls and jars were made egg shaped, melon or onion shaped, and glazed in translucent turquoise, rich dark purple, dark green or gold brown.

The necks of water vessels were long and slender, gradually flaring into round full bellied shapes. In the 12th century Rubayait of Omar Khayyan, a Persian Classic, the neck of a jar is compared to the waist of a beautiful woman.

Throughout the Indo-Pakistan subcontinent, however, the absence from the country of good and abundant kaolin retarded the art of pottery, for really fine wares could not be made.

Lustre-painted ware: Persian late 12th Century(Rayy)

BEST COPY AVAILABLE

Pakistani Potters and Religion

Unlike Hindus, for whom a pottery vessel is so easily defiled that as soon as it has become 'unclean' it must be broken, Muslims are enjoined in the 'Darrimuktar' to use pottery in preference to metal vessels, as the prophet is supposed to have said that those who keep earthen vessels in their houses are visited with respect by angels.

Kulal-Nama : The Potter's Book

This bock, part of a larger one containing sections for other trades and crafts relates the daily life of the potter to the practice of Islam. It is intended for village craftsmen, and is distributed in other Islamic countries, such as Afghanistan, as well as in Pakistan. The origins of the book are probably Persian.

Extracts

Principles of Pottery

O potter, it is necessary for you to know these facts.
From this craft you can earn your livelihood.
O young man, learn the book of your craft quickly.
Look through this book every morning.
O potter, I am telling you that your livelihood will be an honourable one.

Question: O potter, if someone asks you the question: who originally laid the foundations of the profession?

Answer: Tell him immediately that in the time of Adam the angel Gabriel brought all the tools, by the order of Allah, to Adam.

Question: If someone asks you this question, and wants the answer without hesitation: Who continued the work after Adam?
Answer: Tell him at once that Noah did this work successfully. After him Abraham did this work intelligently. After him Isaac did this work with great fondness. Then by the order of Allah, this work was done by Moses, the man who talked with Allah. After that this work came to the prophet Muhammad. After him Ali, the saint of Allah, did this work as a past-time. After him Abu'l-Hasan learnt this art and disclosed it to the world. Then this art became well known to all the people in the world.

Question: If someone asks you a question in such a manner: Who was the spiritual leader (of the pottery profession) and who did the research on it.
Answer: Tell him that the first perfect spiritual leader was the angel Gabriel and that the last perfect man in the art was Mir Kulal, the leader of the potters.

Question: If someone asks you of this profession, who had the first workshop?
Answer: Tell him this fact and make his heart happy. Adam had brought it first; the stone was brought by him from heaven.

BEST COPY AVAILABLE

Digging the Clay

When, O potter, you start digging the clay, I tell you O my friend, then you should recite the following verses: "In the name of Allah, the merciful and kind: 'Help from Allah and victory nigh'."

Beating Clay in the House

If you make a heap of clay and prepare it for kneading, then recite aloud the following verse, O my beloved brother: "In the name of Allah who is kind and merciful: 'Labour, O House of David, in thankfulness; for few indeed are those that are thankful among my servants'."

Kneading of Clay

O young man, when you prepare the clay, whether it is sandy or fine, then you should repeat the following verse and your work will benefit: "Blessed is he who has sent down the Salvation upon his servant."

Sitting at the Wheel

When you sit at the wheel then sweep the place with your own hand. Say these words O my good friend: "This is a clay which has been prepared by the leave of Allah."

Placing Your Foot on the Wheel

When you place your foot on the potter's wheel, then you should recite the following verse and you will never get tired; the verse is as follows: "Take counsel with them in the affair; and when thou art resolved put thy trust in Allah."

Placing Clay on the Wheel

When you place the wheelhead on the wheel and place clay in the mould and want to make a pot from it, then recite this verse loudly: "Surely Allah loves those who put trust (in Him)."

Making a Ewer (Kuza)

Listen, O potter friend, so I may let you know the facts. When you want to make a ewer, then you should recite the following words: "There is no strength but in Allah."

Making a Water Storage Jar

When you prefer to make a water storage jar, and place the clay on the wheel, you should recite this verse with love, and your sorrow will disappear: "Truly, Allah is powerful over everything."

Making a Lid

When you want to make a lid form above and below, you should quickly repeat the following verse: "Truly, it is from Solomon; in the name of Allah who is merciful and kind."

Painting the Pottery

O dear potter, when you make the pots ready, and you want to paint them, then you should recite this verse; "We take our colour from Allah. Who has a better colour than Allah's?"

Smoothing of Pottery With a Stone

When you take a stone in your hand intending to smooth the pottery then ask for help from Allah

and recite this verse: "Allah prevails in his purpose but most men know not."

When you put them in the kiln and heap the fuel on them you should recite these prayers and leave the rest to Allah: "O Allah save them from all calamities and damage and from the rain."

Opening of the Kiln

O potter, before opening the kiln you should perform ablutions, O good mannered one, and after that recite this verse, and the kiln will be blessed: "Come, sweet patience Allah's succour is there in your misfortune."

Peshawar, potters use powdered bulrush instead of salt, using the down of the ripe plant.

It has also been recorded that in areas where sand is not readily available, materials such as chaff, husks, chopped straw, powdered horse or donkey dung, cotton wool, pounded limestone and rotten paper have occasionally been used to temper clay.

BEST COPY AVAILABLE

Potters

Potters in Pakistan are men, although women do help with some stages of pottery making, for example, decorating pots with slip, and sometimes painting patterns.

It is uncommon to find a potter whose father was not also employed in the same trade, although today many potters are discouraging sons from following in their footsteps on the grounds that the market is in decline.

Traditionally there have been two groups of potters in Pakistan; the Kumhar, or village potter, who produces unglazed domestic and agricultural wares, and the art potter, or Kuzagar, who makes artistic, often glazed wares. The name of the Kuzagar (called Kashigar in the Punjab and Sind) derives from Persia, and the town of Kashan, which is the earliest known site of manufacture of glazed ware in the area. The Kuzagar is usually a Muslim of good caste.

Village potters tend to work seasonally, especially in North West Frontier Province, where many also work as farmers. They work in the summer only, when it is easier to dry pots and there is no danger of rain damaging the vessels during a firing. Specialised potters, who produce large quantities of particular wares for distribution over a wide area, work for longer periods of the year, but are still affected by climatic conditions. Potters working in the plains of the Punjab, however, where the climate is hotter can maintain a regular production throughout most of the year.

In some cases different types of ware are produced according to the season. An example of a man from Prang in North West Frontier Province has been recorded who produces sugar pans in the two months before the sugar cane harvest.

The most common type of vessel made is the water storage vessel, which is unglazed and porous, keeping water cool through evaporation from the outer surface. Unlike the cooking vessels made from earthenware, water storage vessels are in no imminent danger of replacement by cheap and hard wearing aluminium cooking pots. Near large cities, many potters have ceased to produce basic domestic pottery, and make instead water jars, flower pots and chilams for huqqas.

Clays

Most potters in Pakistan dig their own clay, often from deposits known for over 200 years. Clay is transported to the potteries by donkeys, each load being about 40 kg. of clay.

Village potters generally dig their clay free, either from common land, or in return for supplying a landlord with domestic vessels. In some small villages one potter at a time will dig clay and distribute it among his fellow potters.

In cities, most potters buy clay from suppliers, as is the case with the Gujrati potters. In Multan where good clays are rare, all the potters use the same source, worked by a miner, who sells clay at 1 rupee for about 36 kg. Here, potters usually buy clay by the bullock cart load, but may mine the clay free if they wish. In Hala, Sind, potters again prefer to pay dealers to mine clay for them, in bulk.

Once the clay has been prepared it is either used at once, or, as in some cases, especially in areas where a potter has to travel far to get clay, and is in the habit of keeping a large stock of prepared clay, stored in an underground pit with a narrow neck, called 'ghambail' or 'bhora', and closed with a cover.

Methods of preparing clays vary in the different regions of Pakistan, and also with the different qualities of clay found in each region. In general clay is left in heaps in the potter's yard to

dry in the sun. Once dry it is broken up and pounded, using sticks, or some harder implement such as the back of a shovel or an iron bar. When the lumps are no larger than 2-3 cm., some potters sieve the clay to remove the larger lumps and impurities. Large lumps are set aside and crushed finer. Sieves are generally made of sheet metal punched with holes. Once the clay is of a fine consistency it is heaped either on the ground, in a shallow pit, or a wooden platform, and water is added. The amount used is just enough to bring the clay to a plastic condition. Exceptionally, in Hala, Sind, clay is slaked in a deep pit or metal drum with excess water.

Once the clay is plastic it is kneaded and tempering materials added. The ratio of tempering material to clay varies considerably, both with the clay, and with the pots to be made.

River sand is used nearly everywhere in proportions which vary according to the quality of the clay. In Karnal, two parts of sand are added to one of clay, but normally ⅓ or ¼ of sand is added. Instead of sand, a light clay is often mixed with a stiff clay to make it easier to work.

In a few districts of the Punjab, salt and saltpetre are also added to clay, to increase the cooling properties of water containers. Salt is used only at the special request of customers, and is added at only about one-hundreth the volume of clay. In

Single Wheel

The single wheel used to be the most commonly used wheel in the North West Provinces, but it has been slowly superseded by the pitwheel. A factory in Gujrat, Punjab, however, uses a modern version of the single wheel, cast in concrete, and can make up to 1000 bowls per thrower in a day, throwing off the hump.

The single wheel is turned by hand using a long stick, and is supported on a wooden axis turning on a pivot fixed to the ground. The wheel itself may be made from clay, stone or wood. Where clay is used, it is ordinary black clay mixed with goat hair and dried in the sun.

The potter takes lumps of prepared clay from the pit, kneads them together on a slab, wets the wheel and places the clay on it. He starts the wheel by hand and sets it spinning. Squeezing the lump of clay into a spiral mound he inserts both thumbs into the bowl, pressing outwards to form a symmetrical hollow. He stretches his fingers down inside and pulls the rim up evenly all round, gradually narrowing the diameter, and continually moistening his hands. The rough shape of the vessel now revolves on top of a pillar of clay. The potter takes a cutting string, wets it, and separates the rough pot shape from the pillar. The result is a cylinder of moist clay, slightly bulging in the middle and without a bottom. In this state it is left for 24 hours to dry, then placed on a board, and the bottom filled in with kneaded clay.

Ashes are then sprinkled over the vessel and it is beaten out with a pestle and mallet. When the final shape has been formed, the vessel is set to dry for about 2 days, then covered with a clay slip, left to dry again for 24 hours, and another slip applied to the upper half. When this is dry the vessel is ready for firing.

Potter's Wheel (dukan)

The structure is placed in a pit dug in the ground, normally 90-90 cm. deep and 90-90 cm. in diameter. Across the top of the pit lies a wooden plank which acts both as a seat for the potter and as the top bearing for a wooden shaft which passes through a hole in the centre. This shaft is thicker at the bottom than at the top. A circular flywheel is fitted over the lower part of the shaft, and wedged to it. An iron spike is driven into the bottom of the shaft, its point resting on a piece of soft stone, like slate, or hard wood. The point is lubricated with a substance such as apricot kernel oil in remote areas, or axle grease where accessible. A wooden wheelhead fits on top of the shaft.

Pit-wheel: two views; NWFP.

In the NW Frontier Province the pit on which the wheel is located is excavated directly into the earth and unlined, whereas in the Punjab the pit is excavated and then lined with fired bricks. In Pakistan pit wheels have no rest for the potter's feet, he rests his left foot on the top cross member of the wheel directly in front of his body.

The right foot continually kicks the flywheel while the potter is using the wheel, when it is at rest the potter rests his right foot on top of the flywheel.

Wheels are made by furniture makers or wood workers. In some cases different types of wood are used for different parts of the wheel, harder and more durable wood being used for parts subjected to greatest stress.

A Method of Making Water Pots in the NWFP

Water pots are formed using a combination of throwing on the potter's wheel, and finishing with a paddle and anvil.

Clay is first kneaded to an even consistency on a 'bench' or disc of fired clay about 0.6cm in diameter.

The initial form of the water jar is thrown on the pit wheel. A lump of clay is placed on the wheelhead and the basic vessel thrown, with thick walls at the base. The neck and rim of the pot are finished on the wheel, so that only the base needs to be modified using a paddle and anvil. The basic form of the pot is cut off from the wheel using a string, removed and put aside until leather hard.

Once it is sufficiently dry, the potter rolls the leather hard pot in sand. Then, taking a strip of cotton cloth, he doubles it several times across the inside of a low rounded dish, and rests the leather hard water pot in this on its side. Using a wooden paddle, and a fired clay anvil inside the pot, the rounded base of the water jar is beaten out. The sandy coating of the pot prevents the wooden beater from sticking. As the paddling progresses, the hard clay softens and the body of the pot becomes almost spherical.

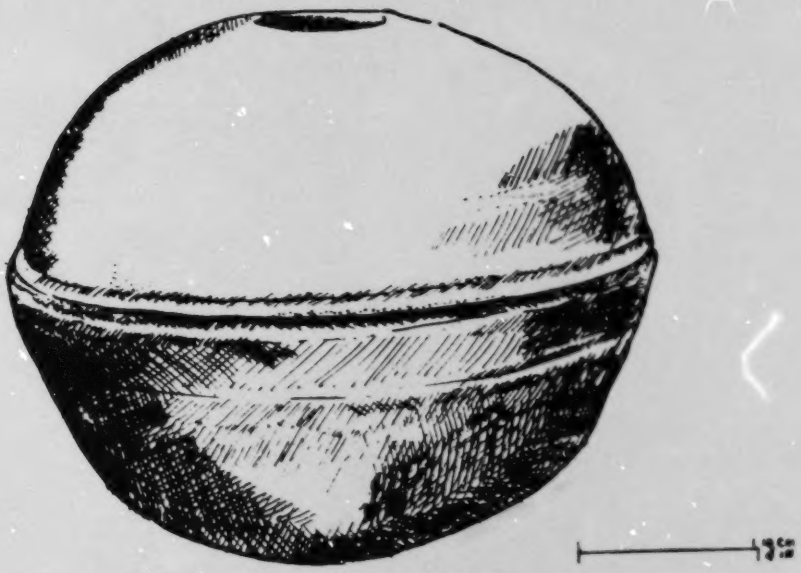
This process complete, the vessel is removed from the cloth lined dish, and a bung temporarily placed in the opening to prevent its shape deforming. The vessel is then lifted and placed upright in a dish mould, where the bottom assumes the shape of the dish. The bung is removed and the vessel allowed to dry.

The final stage requires a tool found only in this part of Pakistan: a fired clay anvil affixed to a wooden stick about 50cm in length. This is used in conjunction with another, more concave, dish mould. Placing the pot upright, in the new mould, the long anvil is inserted through the neck of the vessel and the clay beaten to its final shape.

The completed water pot is then removed from the mould and dried inverted in the potter's yard before firing.

Making a Water Pot using a Mould

Moulds are used which are made from fired clay. The bottom mould is smooth on the interior and is about 1º cm. in radius. The top mould is hemispherical with the same radius as the bottom mould, but has a pattern incised into the interior, and has a hole 9.2 cm. in diameter at the apex.



Two parts of mould assembled.

The top half of the pot is formed first. The potter places the top mould on a cloth pad resting on the wheelhead, and centres it. Then he forms a flat disc of clay by beating out a lump with his hands on a sand dusted clay plate. The sand makes it easier to remove the form from the mould. This flat

Interior of the mould showing impressed decoration. Fired clay, NWFP.

disc is placed in the mould and wetted slightly. A circle of clay is cut out of the form with a knife using the hole in the mould as a guide. Revolving the wheel the surface of the clay is smoothed by pressing an anvil against it. This ensures that the clay is firmly pressed into the incised pattern of the mould. Excess clay is scraped off. The mould is then removed from the wheel and left to dry.

The process is then repeated using the mould for the bottom of the water pot, but the excess clay is not trimmed off completely, and about 2 cm. of the clay protrudes above the lip. This clay is rolled inwards at an angle of about 45 degrees.

The top mould, with the top half of the pot still inside is then placed on the bottom half, and the two joined together. With the wheel revolving slowly the potter places his hand through the opening in the top mould and presses the excess clay from the bottom half of the pot into the gap between the two halves.

Keeping the two moulds firmly together, the potter inverts them on the wheel so that the bottom mould is on top. The bottom mould is removed gently, first tapping it firmly with the heel of the hand to free the pot, and then lifting it off.

The pot is left to dry until leather hard while still resting on the top mould.

When the pot is dry enough the potter replaces the bottom mould. Then, holding both moulds together he inverts them, and for the first time removes the top half of the mould, being careful not to damage the raised pattern as he does so.

The base mould, with the pot now resting right side up is placed back on the wheel.

Kneading a small lump of clay the potter forms a coil and joins this to the edges of the hole at the top of the vessel. This coil is then thrown to form the neck of the water pot.

Water jar in woven hemp carrier.

Decorating Unglazed Ware

Five main methods of decorating simple domestic unglazed ware are in common use throughout Pakistan: burnishing, incised and impressed decoration, clay slips, and pigment brushwork.

Burnishing is mainly associated with pottery made suing the paddle and anvil technique, and is accomplished using the paddle on a leather hard pot.

Incised patterns are applied to pottery with small pointed wooden sticks and may also be used to decorate the inside of pottery moulds. Impressed decoration is applied either directly to the surface of the pot, or to a band of clay smoothed around the leather hard pot, using the fingertips to form a scalloped pattern.

Slips of various composition are commonly used, and range from the simple self-slip, a salt-sand-clay slip applied mainly to water jars, and red, yellow and black clay slips, to a micaceous slip used in Punjab.

They are applied to pots by pouring, by dipping, or using rags which have the result of polishing the vessels at the same time. A commonly used clay slip, yellow ochre in colour, fires to a dull red, and another, black in colour, contains manganese.

The slip applied to water jars is made from two parts of common clay, 1 part of sand and two parts of household salt, suspended in water and applied by hand to bone dry vessels before firing. It is said to have the effect of keeping the water colder in the jars.

The micaceous clay slip used in Punjab is found near common clay deposits on the flood plains of the Sutlej river. Its main ingredient is white mica (muscovite), with lesser proportions of fine quartz grains and salt. The material is ground to a fine

powder, mixed with water and applied to bone dry vessels by pouring or dipping. After firing, the treated vessels have a shiney appearance, with tiny glittering specks.

Pigments used on unglazed ware are restricted to black for the most part, and red and white in some areas. They are derived from clays and stones, found locally or imported. The materials are crushed coarsely using heavy stones, and then ground to a fine powder in a mortar. This is dissolved in water and applied with a brush to pots requiring decoration.

Each potter makes his own brushes - the most commonly used ones for unglazed ware being made from donkey mane hairs tied into bundles about 8cm long. Brushes used for finer work on glazed ware are usually made from camel or squirrel hair, and bound to feather quills.

Decoration of unglazed ware is commonly performed by the potter himself; although some tasks, such as applying slips and painting pigments may be delegated to the women of the household.

BEST COPY AVAILABLE

Firing Unglazed Ware

Methods of firing unglazed ware vary considerably throughout Pakistan and depend upon the area, the circumstances of the potter, climate and available fuels.

The two most simple methods of firing have been observed in the North West Frontier Provence, in the extreme north of Pakistan, among men who work as potters for only a part of the year. These potters have only small amounts of ware at each firing, and although they use the same sites for each firing, they are individually renewed upon every occasion, depending upon the number of pots to be fired.

One of these methods observed in the Chitral Valley is a basic bonfire firing, sited in an excavated depression in the ground approximately 2m wide and 0.3m deep. This size is appropriate for a firing of between 40-50 pots. Wood is used for fuel, since this is readily available, and the ashes may be used later as fertiliser for the potter's fields. The advantage of this method is that a firing takes only about an hour to complete.

The second method consists of a simple pit kiln: a small slate lined pit fuelled with pine bark and roofed over with slate once the pots are in position and the fuel ignited. An unusual feature of this method lies in the slow pre-heating of pots before firing, accomplished by standing them over a household or blacksmith's fireplace until they begin to glow around the rims in poor light (around 400 C).

This process removes all free water from the pots and some water of crystallisation from the clay minerals, so that the main firing may be carried out quickly without shattering.

Paja Kiln

The most common kiln used in the NWFP and Baluchistan is the Paja type, with four permanent mud or stone walls. Some of these kilns are built into a wall or corner of the potter's house. Fuel for these kilns is generally dried dung mixed with chopped straw.

Avi Kiln

In Sind, Punjab and in the region west of the Indus and south of Dera Ismail han, the Avi kiln is widely used. This is shaped like an inverted triangle built into a slope. Fuel and pots are stacked in layers, and the fire started at the bottom slowly and evenly rises upwards. Such kilns range from the most basic open depressions in the ground to more permanent structures with brick walls.

Fuel for these kilns depends on the most common local materials; generally dung, straw or wood is used. Firing losses are often as high as 50 or 60% especially when wood is mixed with other fuels, due to the rapid and uneven heat. Such losses are sometimes caused by rain during firing.

A sophisticated form of this kiln used in Gujrat has an air channel let into the base of the kiln, which is said to reduce firing losses considerably.

Divided Kilns

Divided kilns are used for unglazed ware only in Bannu and Ahmedpur E. They are of a simple updraft design, with a firebox beneath a perforated floor. During the firing the flames rise up through the ware.

Kilns in Bannu are fired with reeds which burn rapidly with a small flame. They are remarkably simple in construction, with a hole excavated for the firebox and earth packed to form the chamber walls.

Blackware and Orangeware

Similar kilns are used in the production of black and orangeware, the two kinds of 'paperfine ware' produced at Ahmedpur E., and known as Bahawalpur pottery by most Pakistanis.

The colour differences are produced by variations in the air and fuel supply during firing, and air supply during cooling.

Separate, but identical kilns are used for firing orangeware and blackware.

Orangeware

When the pots have been stacked in the kiln, the opening at the top is covered with a mud and straw slab with perforations acting as flues. The ware is fired with a clear oxidising flame to a bright orange colour. During cooling the stokehole is loosely sealed with bricks to slow the cooling rate while

allowing a minimal air flow, which enables the ware to retain its orange colour.

Blackware

This is fired similarly to orangeware until it reaches about 500 C-600 C. (This is the range of lowest visible red heat in a kiln). At this point the air supply is restricted by either blocking off the flue holes at the top of the kiln, or by partially sealing the stokehole. This ensures that carbon is deposited in the pores of the vessels. The kiln is next completely sealed while at maximum temperature, while some wood still remains in the firebox to produce Carbon Monoxide. The kiln is then allowed to cool slowly while remaining sealed. This process prevents the carbon deposited in the walls of the vessel from being oxidised (burned out) during the cooling. Once below about 500 C the carbon could not oxidise appreciably even in the presence of air, and the kiln is able to be opened.

BEST COPY AVAILABLE

Domestic Unglazed Pottery Types

Water Storage

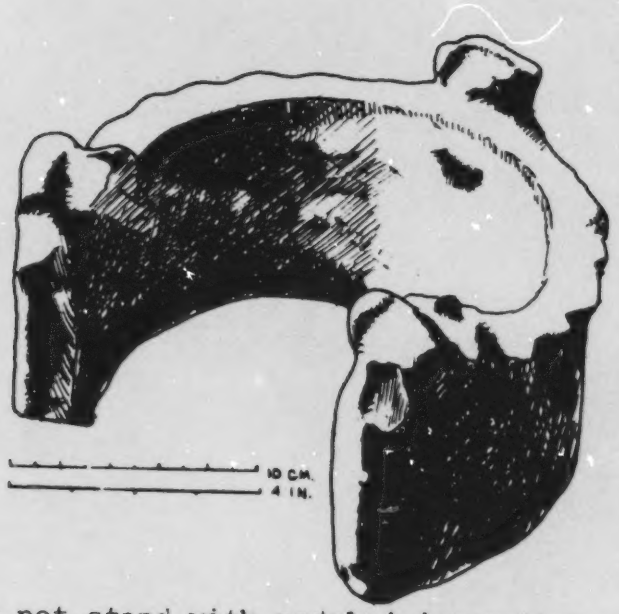
1. Large water storage vessels
2. Water pitchers with handles and spout
3. Water carrying pots (mangay)
4. Ewers for ritual ablutions (ktza)
5. Water flasks or 'pilgrim flasks' (cahin)
6. Water vessels used for carrying and storage with a foot, and lugs to enable attachment to a camel saddle.

Eating and Drinking

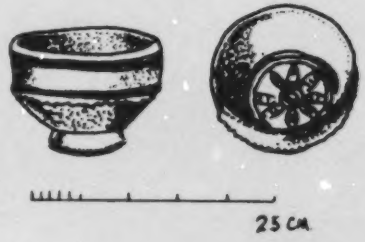
1. Water drinking cups
2. Drinking bowl with turned foot
3. Rice serving dishes
4. Spice dishes, small bowls also used for individual portions of vegetables.
5. Dishes and bowls.

Cooking

1. Flange rimmed cooking pots with shoulders and round base, for warming milk, making tea, cooking rice, vegetables or meat. Various sizes with and without lids.
2. Flat dishes for cooking capati
3. Dishes for preparing dough
4. Cooking pot stands: horseshoe shaped, used usually with unglazed earthenware vessels but occasionally metal.



Cooking pot stand with modeled decoration, Swat.



Profile and top view of bowl for drinking.

BEST COPY AVAILABLE

Butter churns used with wooden churning device.

Large flat pans for sugar cooling.

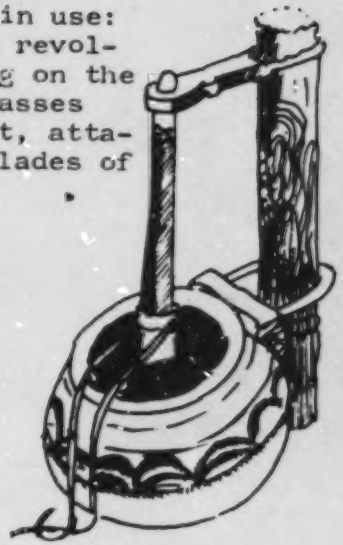
Storage

1. Milk storage vessels
2. Storage pots with inverted rim used for storing and preparing flour/water mixture for capati
3. Grain jars

Butter churn, incised, painted and applied decoration; Deolai, Swat.

Beehive

Butter churn in use: the paddle is revolved by pulling on the rope, which passes around a shaft, attached to the blades of the paddle.



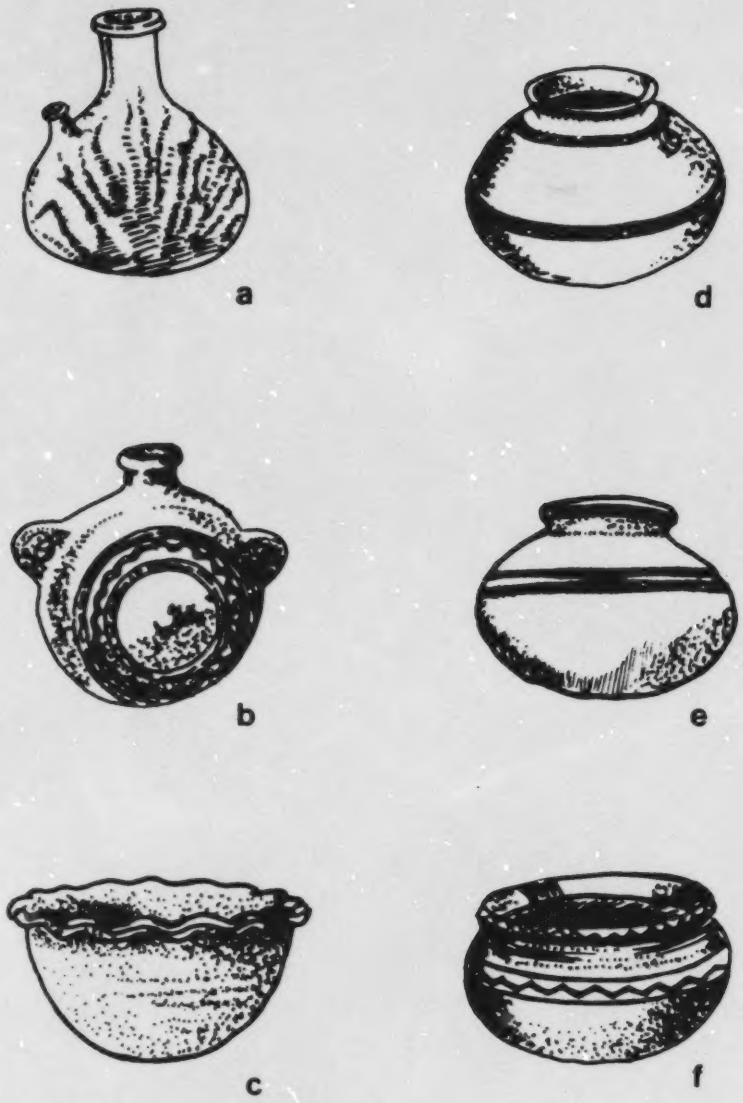
Vessels for washing dishes and clothes.

Agricultural vessels

1. Feeding dishes for cattle (canale)
2. Well liners
3. Beehives
4. Flower pots (gamla) for growing shrubs and flowers
5. Garden pot for decorative use in formal garden, open at top and bottom

Hookahs, unglazed

BEST COPY AVAILABLE



a. Ewer with spout.

b. Water flask (pilgrim flask).

c. Flowerpot or vase.

d. Water storage pot with spout.

e. Butter churn.

f. Cooking pot.

Tandur Making

This is the oven used in Pakistan for baking nan, a common type of bread, and a staple in the diet especially west of the Indus river. The tandur is a standard barrel shape of various sizes. The domestic one is usually 60 cm high and 50 cm in diameter. They are made by the potter in his workshop, and then transported by him to their site and installed. The large ones are however made in situ.

When the form is completed and dried it is placed in position and insulated with a thick coating of mud and straw, which is applied around the exterior and built into a rectangular shape. Tandur can be portable, for example in Sukkur where boatmen live by the river which often floods. They are also sometimes used aboard large river boats. To use the tandur, a small wood fire is laid inside and when only glowing coals remain the nan may be cooked. The lump of prepared dough is weighed, flattened and stuck to the inside of the tandur. When it is cooked the nan falls down and is retrieved with tongs.

Tandur are delivered in an unfired state, and when in place preheated with a small fire and then further fired in use, each time at a maximum of about 300 -400 degrees C.
The tandur is exposed to regular cycles of heating and cooling. The organic additives burn out or oxidise, increasing porosity and resistance to thermal shock. Additives contribute to vitrification of the body with repeated preheatings and increase the strength of the vessels.

The clay is ordinary clay used for pottery but the addition of organic tempering material is common, for example,
Kohat, local clay 40kg., sand 20kg., salt 5kg. and goats hair 0.5kg.
Dera Ismail Khan, clay 90kg., sand 10-15kg., chopped vegetable fibre 0.5kg., sintered plant ash 0.25kg., donkey dung 9kg., salt 0.5kg., and water 60 litres.

Brick Making

Unfired mud and clay fired bricks are common building materials in much of Pakistan. Brickworks are normally commercial industrial organisations employing skilled workmen for the various stages of manufacture. The brickworks are located near deposits of suitable clay.

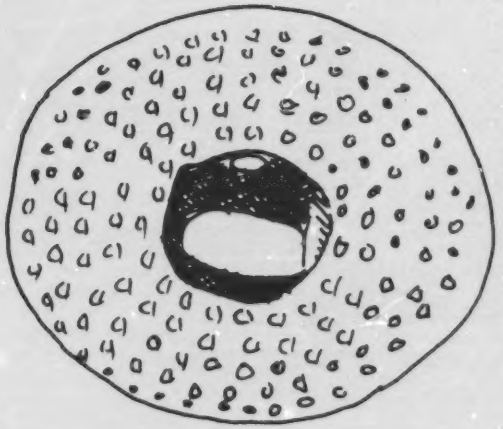
Toys

Village potters produce minature versions of ordinary wares like water pots and cooking pots as toys.

Rice Husking Mill

The mill has a diameter of about 34cm. and is made by hand moulding. The lower grinding surface has diamond shaped indentations made with diamond pointed biscuited clay tools.

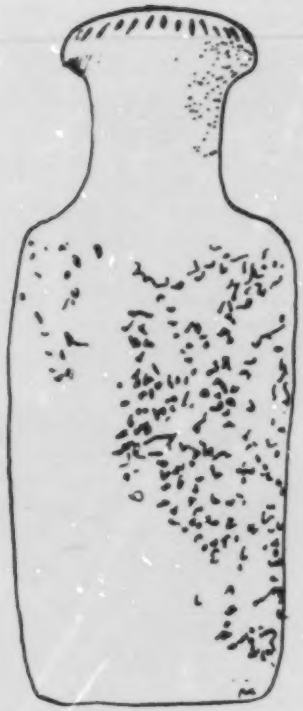
Rice-husking Mill; Nurar, NWFP.



Use of the Mill

A flat topped stone is set on the ground. A wooden plug is set in a hole in the centre so that the wood surface is flush with the stone surface, and iron spike is driven into the wooden plug (axle of mill). With the mill top in place, the ceramic grinding wheel is turned with one hand and grain fed in to the central hole in the top of the mill with the other. Rice removed by lifting the top from the mill and sweeping the grains into a container.

Foot Scrapers



59

Foot scrapers are a traditional product of the Pakistani potter. They are made from solid slabs of clay with handles. Both surfaces are rough textured, and are used to scrape calluses from the feet, or to clean muddy shoes during the rainy season.

They are made very simply. A solid cylinder of clay is thrown on the potter's wheel, with a knob at the top. Once the cylinder has dried to a leather hard stage, it is flattened, leaving the knob untouched, to a slab shape. Grain husks, or rice grains, are pressed into the two flat sides of the piece. Once fired, the grains or husks burn out, leaving rough-textured, abrasive surfaces. These foot scrapers are always undecorated, and unglazed.

60

Two Clay Musical Instruments

Borrindo

The Borrindo is a hollow clay ball, of a size which will sit comfortably in the musician's cupped hands, with three to four holes. One hole, the mouth-piece, is somewhat larger than the others, which are used for the fingering.

It is very simply made, often by children, from ordinary unbaked alluvial clay found throughout the central Indus Valley, and is arguably the most ancient musical instruments of the region.

A simple method of making a Borrindo is described in the Workshop section of this handbook.

61

Dilo and Ghaghar

Both the Dilo and the Ghaghar are baked earthenware jars of a simple design used as rhythmn instruments They are generally played with other instruments, especially the Yaktaro.

Both Dilo and Ghaghar are fundamentally similar, although the Ghaghar is larger, more rounded, and with a shorter neck.

They are made from specially prepared clay by an expert potter, with uniformly thin walls.

To play either, the musician beats rhythmically with his hands, one striking the walls of the instrument, and the other over the mouth of the jar.

62

Glazed Ware

Centres for production of traditional glazed ware include Quetta, Halla, Multan, Thatta, Peshawar, Zakhal Bala and Pabbi, and the Gujrat-Gujrawala-Sialkol district of Punjab. Modern ceramic industries have been established by the Pakistan government in Karachi.

The appearance of these wares is very distinctive. Quetta ware has a pale buff coloured body, brown slip, and is glazed usually in brown or green. No brushwork decoration is used.

Ware from Zakhel Bala appears in a variety of colour comninations, with both overall and brushwork slips, and pigment brushwork under the glaze. Multan ware has a very traditional character, with a white siliceous slip, blue or turquoise underglaze, brushwork decoration, and a clear glaze. Decoration consists of stylized traditional floral motifs on all vessels and most tiles, while some tiles are decorated with geometric designs.

Halla ware can be either lead or alkaline glazed, and tends to vary from one workshop to another, unlike Multan ware. Some Halla tiles appear very similar to Multan work, although incorporating a bright leaf green pigment not used in Multan. Halla alkaline ware is, however, much less stylized than the formal Multan motifs. Halla lead-glazed ware is decorated with overall slips and brush applied slips on floral motifs.

63

Forming and Finishing Glazed Ware

Basic forming techniques are similar for all glazed ware vessels. The pit wheel is generally used: forms are thrown, dried to leather hard and then turned to refine and finish the form.

Double walled vessels, produced near Peshawar are made using an adaptation of this method. Two separate vessels, one of which fits inside the other so that they touch at the rim, are made on the wheel and fitted together when leather hard. The vessels are completed by adding a separately thrown neck and foot. The outer wall is then perforated in a pattern.

If incised or impressed decorations are used, these are also applied when the vessel is leather hard.

Some complex vessels are built up from numerous pieces. Separate parts; neck, centre and pedestal foot, are thrown separately, dried to leather hard and then joined together on the wheel, using plastic clay for the joint.

64

Tiles

Multan art pottery, unlike that of Sind, originated with the production of tiles. The chief place for the manufacture of encaustic tiles, however, was Halla, Sind, where tiles were made in copper green, gold brown, dark and turquoise blue.

In Multan the pricipal colours used in glazed pottery are blue, turquoise and white, which are easy to make. There is a half secret and precarious trade in cobalt for dark blue, while copper oxide properly treated makes turquoise. Recently some Multan potters began to use other colours for decoration: green, brown and yellow applied under the glaze, and gold applied over the glaze - these colours are produced from imported commercial pigments however.

Today tiles are the major ceramic product in Multan, generally for recent tombs, but also tiles for the renovation of older tombs and mosques. Most of these tiles are used locally. Most potters produce tiles on individual order, and each tile maker has a range of standard designs.

Forming of Tiles

The most common tile shapes are square, rectangular and pointed arch shaped tomb plaques. Special tiles may be perforated or shaped for a specific purpose. Clay is kneaded quickly by hand, then the tile shaped roughly on a flat area of the earth floor, by pushing out the clay with the heel of the hand. The

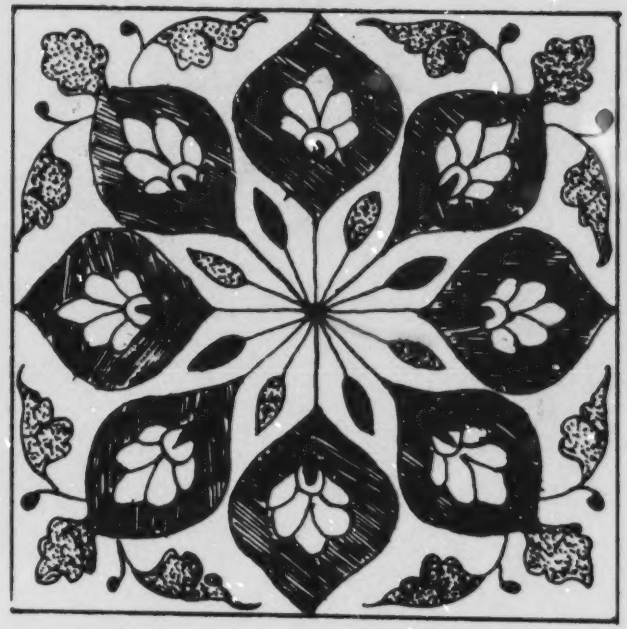
size of the pad of clay will be larger than the size of the finished tile, to allow for shinkage during drying and firing. The tile is then left to dry to leather hard.

The edges of the tile are then trimmed, using a chisel, and with the aid of a rule or set-square, or a metal template.

Tiles patterned in relief are hollowed with a knife at this leather-hard stage. During these

forming operations the potter sits on the floor and the tile rests on a low circular stand. If the face of the tile is not flattened enough it is scraped down, and also at this stage, holes are cut in perforated tiles. When complete the tile is set out to dry completely and then prepared for slipping, decorating and glazing.

Frogs, or hollows to enable the plaster to grip the tiles when set on a wall, are also made at this stage, and appear as a pattern of triangular recesses on the back of the tiles



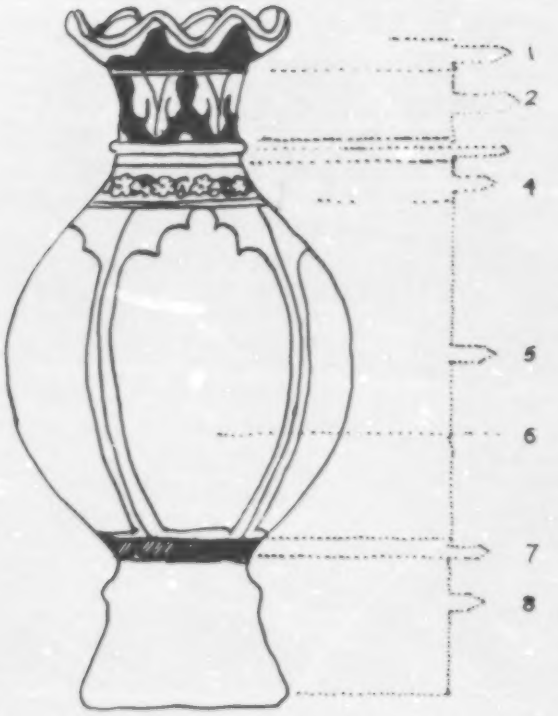
Multan design for tile decoration. From original drawing by master potter Khuda Baksh of Multan. Black=cobalt blue; stippled=turquoise; white=white.

Decoration

Especially in Multan, the painted decoration of glazed wares is its most dominant characteristic. On tiles the body serves only as a vehicle for the painted design, and the forms of vessels are simple and direct, subordinated to the visual effects of the paintings.

A craftsman who is skilled in the craft of decorating, a kashigar, has higher status among craftsmen than the simple kumhar, or potter. But the master, or 'ustad', has the highest status of all, and combines the status of potter and decorator with the knowledge of the history of the craft, and is a teacher of all its skills.

The general term for decoration is 'naqqashi' which refers to Islamic floral decoration applied in any medium. In ceramics more specific terms are used. 'Kashi-Kari' is the art of floral decoration on ceramics. The term 'Kaman-gari' is reserved for a kind of architectural work in which monochrome glazed bricks or tiles are used.



Multan vase shape showing elements of brushwork decoration. (1=terminal border design, 2=standard border design, 3=relief band with lines, 4=border design, 5=main section of decoration with panel, 6=panel, 7=wide band of colour dividing (5) and (8) 8=foot, 9=top section of decoration with borders.)

BEST COPY AVAILABLE

Kashi - Kari

Within this work there are three classes of decoration, divided on the basis of the type of floral motif. These are 'bel', vines; 'panda', plants and flowers; and 'darakht', trees.

The three traditional colours of Multan blue pottery are cobalt blue(lajrard), turquoise (sabzi) and white (citta). Recently some Multan potters have begun to use other colours, predominantly green, brown and yellow applied under the glaze, and gold applied over the glaze. These colours, in use ony since the 1960's, are produced from commercial pigments imported from Europe.

Before pigments can be applied to a vessel or tile the motif is set out on the piece by two methods. One is to form a paper template by piercing fine holes corresponding to the motif, placing this over the vessel or tile, and dusting finely ground charcoal through the template. The second method used is to draw the pattern directly on the vessel with a graphite pencil.

One colour is applied at a time, and all sections of the pattern requiring this colour are completed. Dark blue cobalt is applied first.

A white background is used with blue, or blue and turquoise decoration with a dominant floral motif. A coloured background, either of turquoise with blue and white motifs, or of blue with white and sometimes turquoise motifs produces a

dominant background.

The illustration shows how a vessel to be decorated is divided into distinct areas.

In addition to the common floral motifs used for decoration, Multan ware commonly incorporates calligraphy as a decorative element, usually the word 'Allah', or a verse from the Qur'an.

North West Frontier Province.

Decorative materials in the N.W.F.P. are a white slip, a blue from cobalt, brown from manganese, and green from copper pigments. A Yellow slip is also sometimes used.

Characteristic designs are floral and geometric, applied with a brush made from donkey mane, and overlaid with a lead glaze.

Preparation of Multan Glazes

Multan potters use two basic materials for glaze making, quartzite stone and calcined plant ash. Borax is used in most glaze compositions, and ground glass is used as a cheap addition by some potters.

Quartzite stone is prepared for glaze making by breaking up large lumps with a hammer and then crushing these pieces in an iron pestle and mortar. This resulting powder is then washed several times to remove small pieces of plant and organic material. The washed powder is then pread out on a cloth and sun dried.

Plant ash, obtained from dealers in the Multan bazaar is purchased in rock-like blocks, which are broken up at the workshop in an iron mortar

Borax, also purchased in the Multan bazaar, is sold in medium sized crystals and needs no further preparation by the potter.

Glass has recently been used by some potters, but it is generally considered to produce glazes of inferior quality. It is said to flake off more readily than normal glaze and is prone to crazing.

Usually 10-15 kgs of glaze are prepared at one time. Powdered plant ash and quartzite are mixed in approximately equal proportions by weight. When the blend has been hand mixed, cold water is added, enough to wet the powder, and the mixture is joined
is formed into small balls, about 10 cm. in diameter, which are left to dry in the sun for 10-15 days.

After drying, the balls are sintered in the kiln. At the end of a normal firing the balls are thrown into the bottom of the firebox, which by this time is filled with ash, and the mouth of the stokehole is sealed off. The kiln is left to cool for three or four days. The balls heat very quickly when placed in the firebox and then cool slowly.

When the kiln has cooled the balls are removed from the firebox. The balls are now quite varied in appearance and in colour.

The balls are crushed using an iron mortar and pestle, which does not produce a fine powder.

BEST COPY AVAILABLE

Generally, although the procedure varies from batch to batch, the next stage is to add a fusible material such as borax or ground glass to the powder. Coated crucibles are filled and placed on the firebox of the kiln at the start of an ordinary glaze firing, or a frit furnace may be used. In the case of a kiln, special brick platforms are built along the sides of the fire-box to support the crucibles. Placed before firing begins, the crucibles can only be removed a week after the kiln has been opened and the pots removed.

When the frit is fired, the crucibles are broken with a hammer, and the frit comes away redily. The block is broken up first with a hammer and then ground to a coarse powder with an iron mortar and pestle. The material is ground in the quern to produce the finest grade of powder. This powder is used as the final glaze, known in Multani as kac

COMPOSITION OF GLAZE BATCH MATERIALS AND SEQUENCE OF PREPARATION

Locally	Quetta (alkaline-lead glaze)	Halla (lead glaze)	Halla (alkaline glaze)	Multan (alkaline-lead glaze)
Batch Composition (% by weight)	57.14% glass (cullet) 28.57% borax ($Na_2B_4O_7.10H_2O$) 7.14% red lead (Pb_3O_4) 7.14% colorant (Cu or Mn compounds)	68.75% red lead (Pb_3O_4) 31.25% quartz sand	50% soda ash ($Na_2CO_3.10H_2O$) 50% quartz sand	50% plant ash 50% quartzite
Preparation	↓	↓	↓	↓
	Powders mixed	Heated in crucible	Heated in crucible	Powder pressed into balls, heated in fire-box of kiln to sinter
		Frit	Frit	Borax, cullet, lead oxide may be added
		Powders Mixed	Crushed to powder	Heated in crucible
	Application	Application	Application	Frit
				Crushed to powder
				Application

76

Table 1.

77

SEQUENCES OF APPLICATION OF DECORATION AND OF GLAZES ON GLAZED WARE

Quetta (alkaline-lead glaze)	Halla (lead glaze)	Halla (alkaline glaze)	Multan (alkaline glaze)
Dry vessel	Dry vessel	Dry vessel	Dry vessel
Slip (mudstone with kaolinite, quartz, illite, (5-10% Fe)	Slips (clays; some have Fe or Cu oxides added for colour)	Slip (finely ground flint)	Slip (mixed as 50% glaze 50% quartzite)
Dry	Dry	Dry	Dry
↓	Brushwork decoration (slips)	Brushwork decoration (pigments)	Brushwork decoration (pigments)
	Dry	Dry	Dry
Apply glaze	Apply glaze	Apply glaze	Apply glaze
Dry	Dry	Dry	Dry
Firing	Firing	Firing	Firing

Table 2.

Firing of Glazed Ware

Most kilns used by glazed-ware potters are of the divided type, known as updraft kilns. These are composed of a firebox chamber, where fuel is burned, with an opening at the top leading to the upper chamber, in which pots are stacked for firing.

The fuel used for glazed ware is always wood, including jand, jujube, acacia, poplar and rosewood. Coal is never used by glazed-ware potters, although it is used in modern brickworks in Pakistan.

Potters prefer woods that burn with a clear, long flame, to those such as pinewood, burning with a short flame. Nevertheless, all potters have to use local and economical wood, and always sun dry it before use.

Saggar containers to protect ware from direct contact with the flame are not used in any circumstances, although stilts and props are used to support ware in the kiln and prevent vessels fusing together. Use of three pointed stilts on flatware results in the three characteristic stilt scars, which can be seen on the face of glazed dishes, plates and bowls.

Glazed Ware Pottery Types

All types of pottery may be glazed, although specific items may vary from region to region, and some are made only according to special orders.

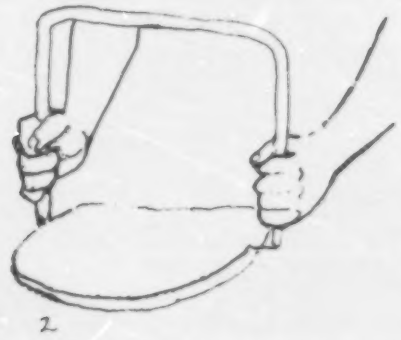
Glazes are applied commonly in three ways : on the exterior only, e.g. Hookahs; on the interior only, e.g. bowls and plates; and glazes applied to both the exterior and interior of a vessel, e.g. jars with lids, 'qulpi'.

Glazed wares include Hookahs (cilams), bowls, small plates with perforated decoration, paperfine double-walled ware, large dishes and plates, lidded jars, perfume flasks, toys, flower vases, egg-cups, tiles, candleholders, and cups and saucers or ash-trays. The latter two are recent innovations made specifically to cater to the tourist trade, and to compete in some measure with modern chinaware which is factory produced.

Especially in Multan, tiles and architectural pieces are a speciality.

Workshop Section Method for a combined mould and throwing technique used by traditional potters in NWFP.

1 Top mould (with hole) centred in thrown clay chuck.



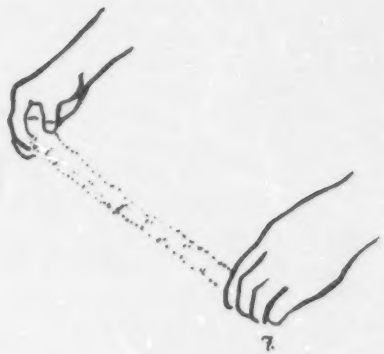
2. Wire cut slab cut from wedged lump of clay.

3/4. Slab pressed gently into mould.

5. Slab smoothed as wheel rotates.

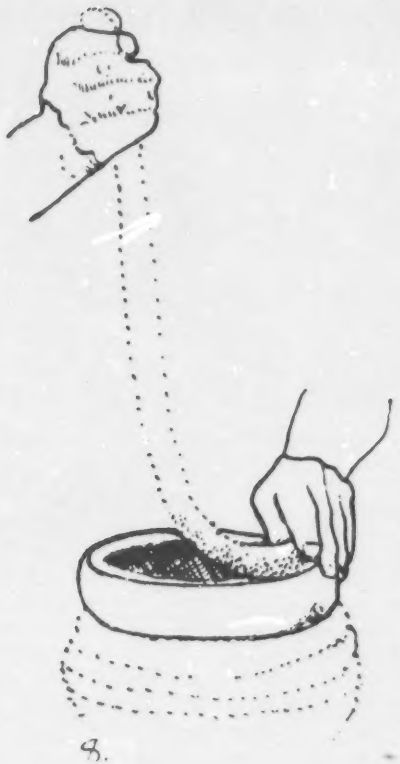
6. Hole cut out and top mould removed.

BEST COPY AVAILABLE



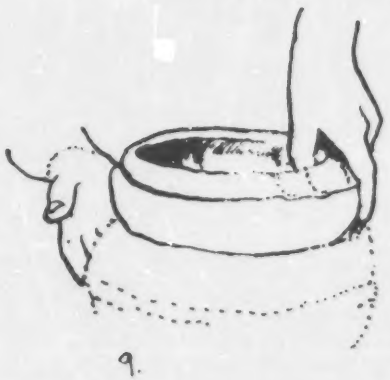
7.

7. Process repeated with bottom mould and a thicker coil of clay rolled out.



8.

8. Thick coil pressed on to top edge of slab.



9.

9. Coil smoothed into slab.

10.

10. Coil thrown smooth and made thinner.

11

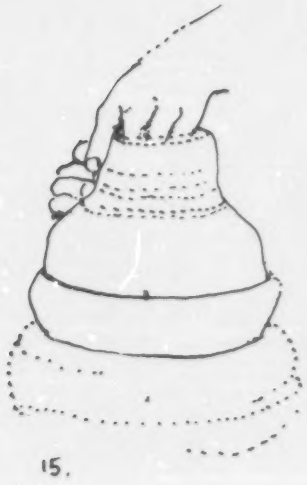
11/12. Top mould joined to bottom mould, over lapping clay sections united together through top aperture.

12.

13.

13. Wheel head changed to throw a thick clay ring for neck.

14.

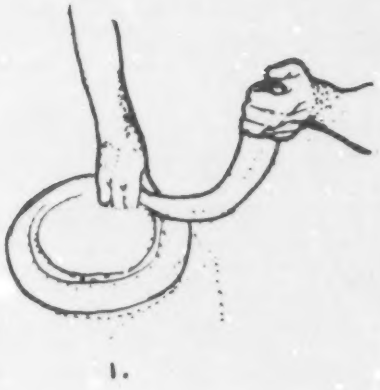


15.

14/15. Top mould removed, clay ring luted on and the neck thrown. A foot ring (not used by Pakistani potters) may be thrown on later by upending leather-hard pot in clay chuck.

Illustration of water pot

Making a Double-Walled Pot (Cilam)



1.

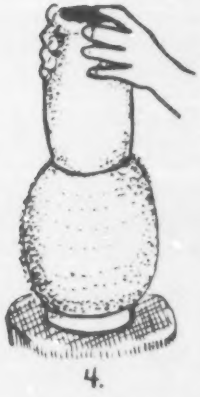
1. Fix a clay chuck to the wheelhead.

2.

2. Place thrown form of outer wall of vessel in chuck.

3.

3. Turn the outer form and cut the out the base.



4.

4. Place the inner form inside the outer.

5.

5. Inner and outer forms joined by smoothing.

6.

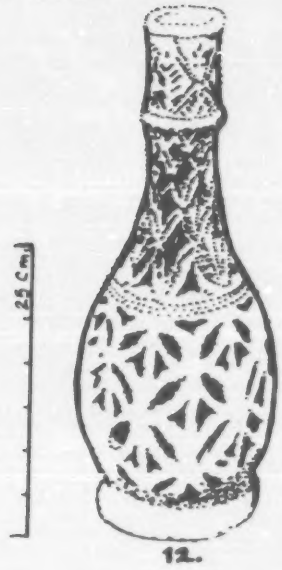
6. Remove excess clay from top of inner form.

7. Join a coil of clay on top of combined forms.

8/9. Throw coil of clay to form neck of cilam

10. Place the completed form on a prop on the wheelhead, to raise it to eye level.

11. Carve stylized decoration as perforations in the outer wall of the cilam



12. Completed form.

Making a Musical Instrument

Borrindo

A Borrindo is a simple hollow clay ball with three to four holes, one somewhat larger and the others smaller and of the same size. The holes are arranged in an isosceles triangular form. Some adults make fine borrindos of a larger size, put pottery designs on them and then bake them. These baked borrindos with pottery designs are the later evolved forms of this folk instrument, which appears to have been used in its simple unbaked form since times immemorial.

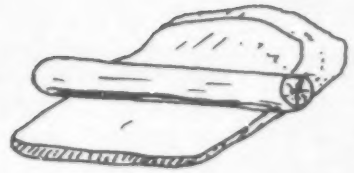
The sound notes are produced by blowing somewhat horizontally into the larger hole. Finger tips are placed on the smaller holes to regulate the notes. It is easy to play, and hence its popularity among the children and the youth who sound sweet notes on it while grazing the cattle.

Suggested method:

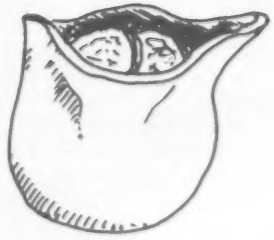
1. Make a ball of crumpled-up newspapers. Tie with string or thread to help keep the shape.
2. Roll out a slab of clay to about ¼" thick.
3. Carefully smooth the clay over the newspaper ball. Old tennis balls, styrene balls or other suitably shaped spheres can be used for the mould. But the paper will burn out easily in kiln.
4. Let the clay dry a bit until it's workable; then carefully place the holes in an isosceles triangular form.

N.B. If moulds other than newspapers are used remember to make the mould in two halves, let dry a bit then use clay to help form the two halves together.

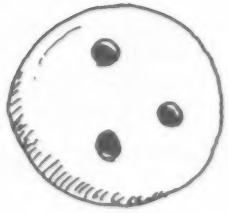
1,



2,



3,



4,

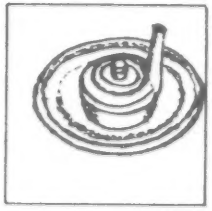
SLIDE IDENTIFICATION

1. Saucer, from Tatta, Sind. One of a pair made in glazed earthenware. Slip, with conventional floral design, in areas of yellow on dark brown. 19th. century. Victoria and Albert museum no. 2921-1883(I.S.)

2. Reverse side of the above saucer, showing decoration.

3. Bottle, from Sind. Red unglazed ware with incised decoration. V&A.no.01506(I.S.)

4. Cooking pot in red unglazed ware ornamented with black. V&A.no.03950(I.S.)



5. Small toy mill, from Halla, Sind. Made from blue glazed earthenware. V&A.no.269-1883(I.S.)

6. Covered bowl with double rim. Highly decorated in red green and white. V&A.no.04111 0A(I.S.)

7. Hookah bowl glazed in yellow and brown. V&A.no.01639(I.S.)

8. Bottle from Tatta, Sind. Yellow on brown. V&A.no.2965-1883(I.S.)

9. Coarse glazed ware dish. Green and yellow, decorated with a peacock design. V&A.no.22-1880(I.S.)

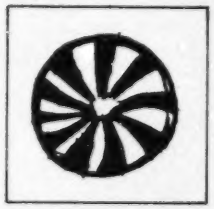
10. Chillum, for use with Hookah. Made from perforated yellow and green earthenware. One of a set, this example is inset with a mirror. V&A.PN12.39 01574(I.S.)

11. Plate in unglazed earthenware, from Tatta, Sind. Black ornament on white centre.
V&A.no.241-1883(I.S.)

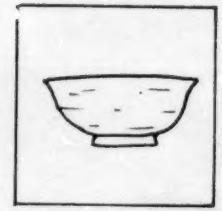
12. Water vessel in unglazed earthenware, with red and black ornament.
V&A.no.03947(I.S.)

13. Multan earthenware water vessel ornamented with relief floral decoration. Lusted with powdered mica. Contained in hemp carrying sack.
V&A.no.367-1883(I.S.)

14. Covered water bottle from Sind. Red unglazed earthenware. 19th.century.
V&A.no.0394(I.S.)



15. Glazed earthenware bowl from Halla, Sind. Ornamented inside with blue radiating stripes on a white ground.
V&A.no.300-1883(I.S.)



16. Side view of no.15.

17. Bottle in glazed earthenware from northern India. Similar to many produced in Pakistan. Bulbous body, mouth and two arched handles. Decorated with carnations. Dark blue on torquoise. 19th.century.
V&A.no.3-1880.

18. Water bottle in glazed earthenware with stopper. From Tatta, Sind. Thin yellow glaze, brown neck and stopper. 19th.century.
V&A.no.2943-1883(I.S.)

19. Mica brushed water cooler in unglazed earthenware from Sind. Raized, perforated top.
V&A.no.01570(I.S.)

20. Scent bottle with stopper(Attardan) from Tatta, Sind. Made from glazed earthenware, decorated with yellow slip on a dark brown ground. 19th.century.
V&A.no.3002-1883(I.S.)